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A New *Eosentomon* (Protura, Eosentomidae) from Yonaguni Island, Southwest Japan¹⁾

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Abstract A new species of the genus *Eosentomon* is described from Yonaguni Island of the Ryukyus under the name *E. dounanense* sp. nov. It is similar to *E. zhanjiangense* Zhang from South China, but is distinguished from the latter by the different relative lengths of foretarsal sensillae *f1* and *b'2* as well as by the structure of female squama genitalis.

Key words: Protura; new species; *Eosentomon dounanense*; Yonaguni Island.

Through my field research on the proturan fauna made in Yonaguni Island, the westernmost one of the Japanese Islands, in January 1993, I was able to find an interesting form from two collecting sites of the island. A close examination has revealed that it is new to science as will be described in the following lines. The type specimen designated in the present paper is to be deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo. Before going further I wish to express my hearty thanks to Mr. Kihachiro ARATAKE, Mr. Zensyu MIYARA, Dr. Ikuo SUNAGAWA, Dr. S.-I. UENO and all who favoured me with every kind of help through my study.

Eosentomon dounanense sp. nov.

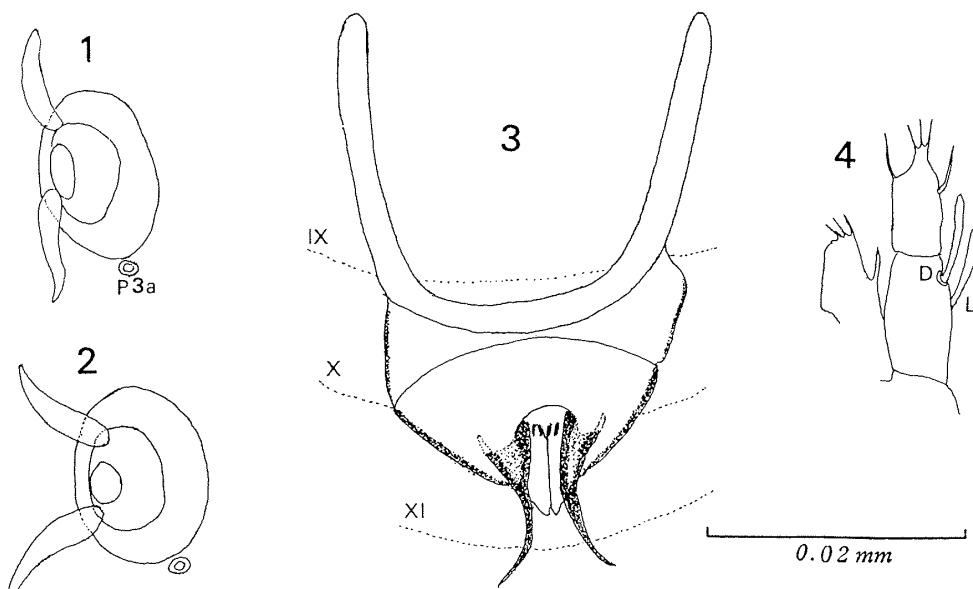
(Figs. 1–8)

Specimens examined: 4 ♂, 3 ♀ and 1 matus junior, Kubura-daki (*Livistona chinensis*, *Ficus microcarpa*, etc.), 130 m above sea-level, Yonaguni Island, 31-I-1993, collected by Zensyu MIYARA, Ikuo SUNAGAWA and Gentaro IMADATÉ; 1 ♂ and 1 ♀, Dounan-daki (*Persea thunbergii*, *Daphniphyllum glaucescens teijsmannii*, etc.), 90 m alt., Yonaguni Island, 31-I-1993, collected by I. SUNAGAWA, Z. MIYARA and G. IMADATÉ.

Body length 780–830 µm.

Head oval, 116–126 µm. Anterior additional setae absent, but the posterior additional are present; subposterior setae about 3/2 times the posterior setae in length. Labral setae present; rostral setae a little shorter than the subrostral.

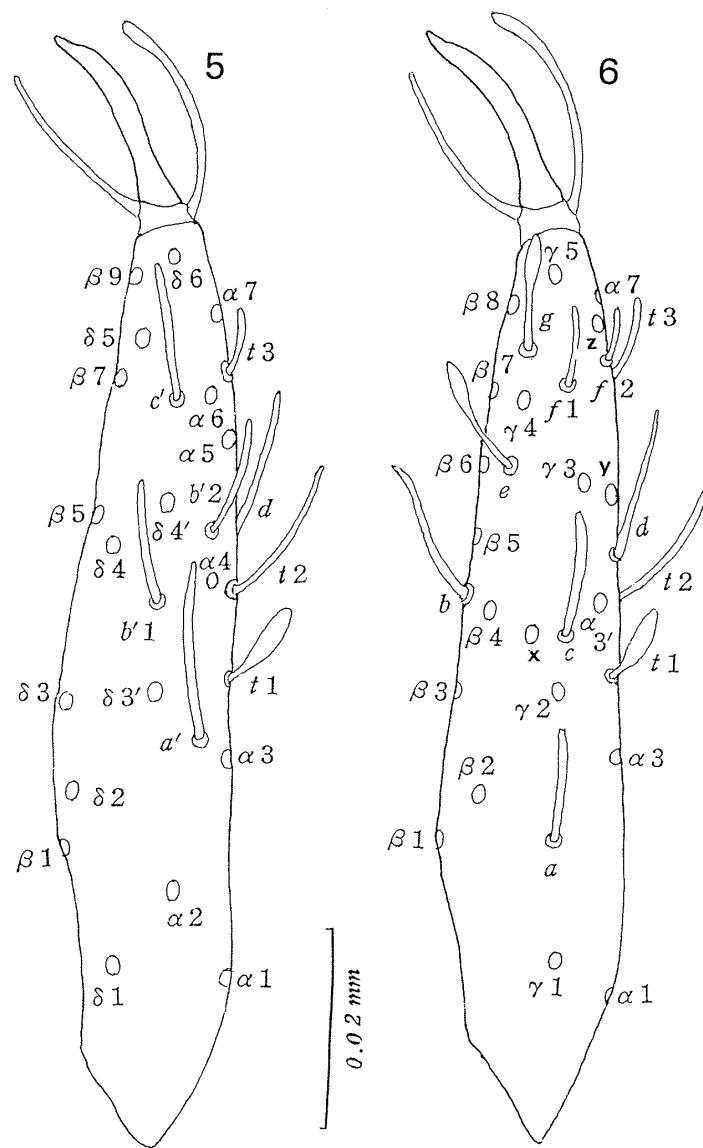
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Figs. 1–4. *Eosentomon douunanense* sp. nov. —— 1, Spiracle, thorax II; 2, same, thorax III; 3, female squama genitalis; 4, maxillary palpus. Signs: D, dorsal sensilla; L, lateral sensilla.

Table 1. Chaetotaxy of *Eosentomon douunanense* sp. nov.

	Dorsal			Ventral		
	Formula	Composition of setae		Formula	Composition of setae	
Thorax I	4				6-2 6	A 1, 2, 3, M P 1, 2, 3
II	6 16	A 2, 4, M P 1, 1a, 2, 2a, 3, 3a, 4, 5		6-2 6	A 1, 2, 3, M P 1, 2, 3	
	6 16	A 2, 4, M P 1, 1a, 2, 2a, 3, 3a, 4, 5		6-4 8	A 1, 2, 3, M 1, 2 P 1, 2, 3, 4	
Abdomen I	4 12	A 1, 2 P 1, 1a, 2, 2a, 3, 4		4 4	A 1, 2 P 1, 2	
	10 16	A 1, 2, 3, 4, 5 P 1, 1a, 2, 2a, 3, 4, 4a, 5		6 4	A 1, 2, 3 P 1, 2	
II-III	10 16	A 1, 2, 3, 4, 5 P 1, 1a, 2, 2a, 3, 4, 4a, 5		6 4	A 1, 2, 3 P 1, 2	
	10 16	A 1, 2, 3, 4, 5 P 1, 1a, 2, 2a, 3, 4, 4a, 5		6 10	A 1, 2, 3 P 1, 2, 2a, 2a', 3	
IV	4 16	A 4, 5 P 1, 1a, 2, 2a, 3, 4, 4a, 5		6 10	A 1, 2, 3 P 1, 2, 2a, 2a', 3	
	2 16	A 5 P 1, 1a, 2, 2a, 3, 4, 4a, 5		6 10	A 1, 2, 3 P 1, 2, 2a, 2a', 3	
V-VI	6 9	M 2, 4, 5 P c, 1a, 1a', 2, 2a		0 7		
	8	1, 2, 3, 4		4	P c, 1, 1a, 2	
XI	6	1, 3, 4		8	1, 2	
XII	9			12		



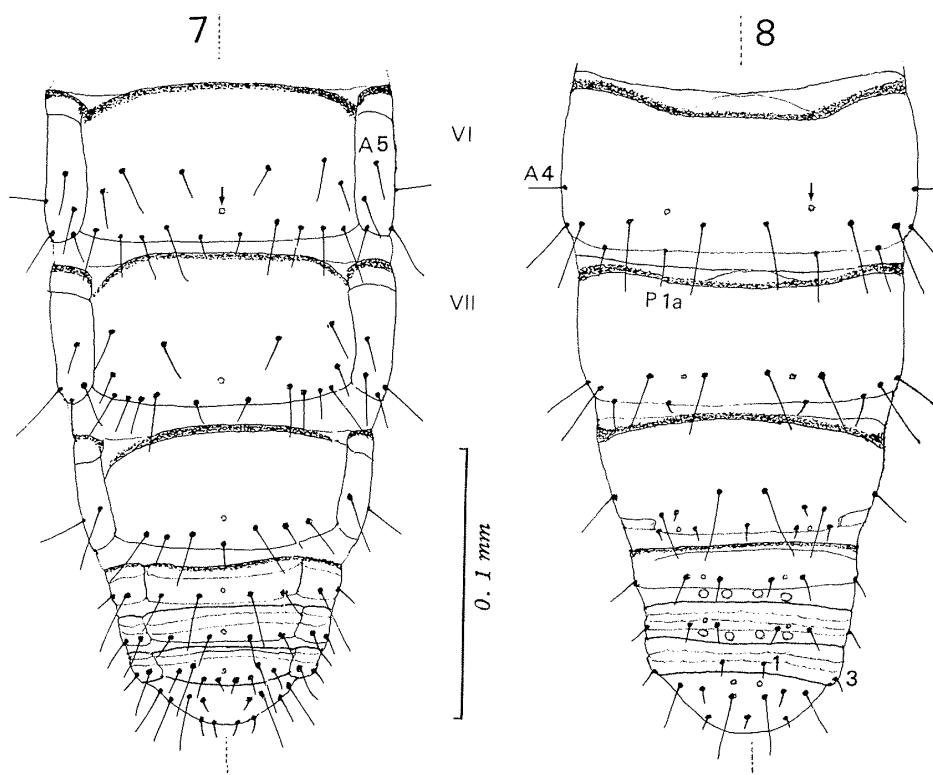
Figs. 5–6. *Eosentomon doumanense* sp. nov. —— 5, Foretarsus, interior view; 6, same, exterior view.

Maxillary palpus with two sensillae, lateral sensilla subequal to the dorsal in shape and length (Fig. 4). Pseudoculus without inner globule, PR=9–11.

Tracheal camerae slender (Figs. 1–2). Foretarsus (Figs. 5–6) 90–94 μm , TR=4.7–5.3; empodium a little shorter than the claw, EU=1.0; S-shaped seta subequal to the empodium in length. Dorsal sensilla $t1$ about a halfway between $\alpha 3$ and $\alpha 3'$, BS=1.1; $t2$ thin; $t3$ normal. Exterior sensilla a of medium size, its apex surpassing the level of $\alpha 3$; d somewhat broad proximally; e and g spatulate; $f1$ relatively short, its apex not surpassing the base of $\alpha 7$; $f2$ short. Interior sensilla $b'1$ subequal to $b'2$ in length; apex of c' reaching the base of $\delta 6$. Middle tarsus 42–44 μm (38 μm

in maturus junior); its claw 13–14 μm ; empodium very short, less than one-tenth the claw in length. Hind tarsus 51–54 μm (48 μm in m.j.); its claw 14–15 μm ; empodium very short, less than one-tenth the claw in length; basal seta thick and spine-like.

Chaetotaxy as shown in Table 1 and Figs. 7–8. On thoraces II–III, dorsal P 1a situated a little posterior to the row of P1 and 2, seta-like and subequal to P1 in length, P2a on the same row as P2 and 3, less than 2/3 of P2 in length. Abdominal tergites II–IV with five pairs of anterior setae; terg. V–VI with two pairs, A4 and 5; terg. VII with a single pair, A5; terg. IX–X with four pairs of tergal setae; terg. XI with three pairs, 1, 3 and 4. On terg. I, P 1a situated a little posterior to the row of P1 and 2, hair-like and subequal to P1 in length, P3 sensilla-like and very short, P4 rudimentary. On terg. II–VI P1a and 2a situated a little posterior to the row of P1 and 2, hair-like and more than 2/3 of P1 in length. On terg. VII P1a and 2a situated a little posterior to P1 and 2, P1a sensilla-like and very short, less than 1/6 of P1 in length, but P2a hair-like and more than 1/3 of P2 in length. On terg. VIII P1a' with no basal dilatation, in normal position. Tergal setae 1 on terg. XI short, less than 1/2 of those on terg. IX. Laterostigma II–IV distinct, with no reticulation. Lateral sclerotization on sternite VIII distinct. Tergite XII with a pair of intergu-



Figs. 7–8. *Eosentomon douunanense* sp. nov. —— 7. Abdomen VI–XII, ventral view; 8, same, dorsal view. Arrows show integumental pores. Signs: VI, abdomen VI; VII, abdomen VII.

mental pores.

On female squama genitalis (Fig. 3), caput processus blunt, filum processus relatively short, lateral sclerotizations on both sides and two pairs of short median sclerotizations distinct.

Holotype: ♀, Kubura-daki, Yonaguni Island, Okinawa Pref., 31-I-1993, collected by Z. MIYARA, I. SUNAGAWA and G. IMADATÈ.

Notes. The present new species is closely similar in many respects to *Eosentomon zhanjiangense* ZHANG from Guangdong Province (ZHANG, 1983) and Hainan Province (YIN, 1986), South China, but is different from the latter in the relative lengths of foretarsal sensillae $f'2$ and $b'2$ as well as in the structure of female squama genitalis.

Abnormality seems rare in chaetotaxy. In one female from Kubura-daki of the ten specimens examined, asymmetric and extra occurrence of A4 on abdominal tergite VII is observed.

The specific name is derived from Dounan, the old native appellation of Yonaguni Island.

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